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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,643	02/06/2007	Johannes Gerardus Maria Schilder	TS1455US	4365

23632 7590 05/19/2011

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ART UNIT	PAPER NUMBER
1723	
MAIL DATE	DELIVERY MODE
05/19/2011	PAPER

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/580,643
Filing Date: February 06, 2007
Appellant(s): SCHILDER, JOHANNES GERARDUS MARIA

Craig M. Lundell
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 4/14/2011 appealing from the Office action mailed 11/18/2010.

(1) Real Party in Interest

The examiner has no comment on the statement, or lack of statement, identifying by name the real party in interest in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The following is a list of claims that are rejected and pending in the application:

1-12 and 16-19

(4) Status of Amendments After Final

The examiner has no comment on the appellant's statement of the status of amendments after final rejection contained in the brief.

(5) Summary of Claimed Subject Matter

The examiner has no comment on the summary of claimed subject matter contained in the brief.

(6) Grounds of Rejection to be Reviewed on Appeal

The examiner has no comment on the appellant's statement of the grounds of rejection to be reviewed on appeal. Every ground of rejection set forth in the Office action from which the appeal is taken (as modified by any advisory actions) is being maintained by the examiner except for the grounds of rejection (if any) listed under the subheading "WITHDRAWN

REJECTIONS." New grounds of rejection (if any) are provided under the subheading "NEW GROUNDS OF REJECTION."

(7) Claims Appendix

The examiner has no comment on the copy of the appealed claims contained in the Appendix to the appellant's brief.

(8) Evidence Relied Upon

US 4,046,541	ANDERSON	9-1977
EP 0318071 A1	SEGERSTROM	5-1989
US 4,000,753	ELLIS	1-1977

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1, 2 and 6-9 are rejected under 35 U.S.C. 102(b) as being anticipated by Anderson (US 4,046,541).

Regarding claims 1 and 9, Anderson discloses reactor vessel (Fig. 2) comprising a reaction area (area above spray ring 126) and, disposed gravitationally lower than the reaction area, a slag water bath (107, see Fig. 2) for holding water and receiving char and/or slag from the reaction area (col. 4, lines 67 - col. 5 line 6), and

a spray ring (126), for wetting char and/or slag in a water bath with a wetting fluid (see Fig. 3 which illustrates the spray ring, and see abstract which discloses a slag cooling system), the spray ring (126) comprising a loop conduit arranged in a loop-line (see Fig. 3 which illustrates the spray ring 126 in the shape of a loop), which loop conduit is at an inlet point provided with an inlet for feeding the wetting fluid into the loop conduit in an

inlet flow direction (see col. 6 lines 11-28 which discloses that the loop conduit 126 is fixed with a plurality of inlet conduits 125 that feed cooling fluid into the loop conduit), and with a plurality of outlet openings for spraying the wetting fluid out of the loop conduit (see col. 6 lines 32-37 which discloses that the loop conduit can include spray nozzles for directing the cooling fluid into the gasifier), wherein the inlet flow direction has a component that is tangential to a loop-line flow direction of the wetting fluid through the loop conduit at the inlet point (see Fig. 3 which illustrates the tangential introduction of cooling fluid into the spray ring 126 from nozzles 125), and

said spray ring (126) being arranged above the water surface (107) of the water in the slag water bath (see Fig. 2).

Regarding claim 2, Anderson further discloses the loop conduit (126) forms a peripheral ambit around an encompassed area (see Fig. 2 and Fig. 3 which illustrate that spray ring 126 is circular loop that encompasses an area) and whereby the outlet openings are directed such that the outlet flow direction of the wetting fluid has a component directed inwardly towards the encompassed area (see col. 6 lines 32-37 which discloses that the loop conduit can include spray nozzles for directing the cooling fluid toward the center of the loop circuit/axis of the duct).

Regarding claim 6, Anderson further discloses a plurality of, preferably three or more (see Fig. 3 which illustrates a plurality of inlets), inlets are provided in a plurality of inlet points, whereby the inlet flow direction in each of the inlet points has a component that is tangential to the loop-line flow direction in each inlet point (see Fig. 3).

Regarding claim 7, Anderson further discloses the plurality of inlet points are equally distributed along the loop conduit (see Fig. 3).

Regarding claim 8, Anderson further discloses the included angle between the inlet flow direction and the loop-line flow in each inlet point is less than 80° (see Fig. 3 which clearly illustrates an angle between the loop-line flow and the inlet flow direction is less than 80°).

Claims 1, 2, 4, 5, 9-12 and 16-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Segerstrom (EP 0318071 A1).

Regarding claims 1 and 9, Segerstrom discloses reactor vessel (Fig. 1) comprising a reaction area (area above spray ring 26) and, disposed gravitationally lower than the reaction area, a slag water bath (28, see Fig. 1) for holding water and receiving char and/or slag from the reaction area (col. 3, lines 36-42), and

a spray ring (26), the spray ring comprising a loop conduit arranged in a loop-line (see Fig. 5 which illustrates a spay ring), which loop conduit is at an inlet point provided with an inlet for feeding the wetting fluid into the loop conduit in an inlet flow direction (see Figs. 2 and 5 which illustrate an inlet point where fluid enters the spray ring from an inlet conduit), and with a plurality of outlet openings (12, see Fig. 5) for spraying the wetting fluid out of the loop conduit, wherein the inlet flow direction has a component that is tangential to a loop-line flow direction of the wetting fluid through the loop conduit at the inlet point (the inlet flow direction, which is viewed as being the flow direction of the fluid at or near the physical connection of the inlet pipe to the spray ring,

will have at least a component of the flow direction that is tangential to the flow direction of the loop line conduit/spray ring because the flow of the fluid will change directions at the inlet of the loop line conduit/spray ring),

said spray ring (26) being arranged above the water surface (28) of the water in the slag water bath (see Fig. 1).

The examiner notes that the limitation contained in claims 1 and 9, which states "wherein the inlet flow direction has a component that is tangential to a loop-line flow direction of the wetting fluid" does not distinguish itself over the apparatus of Segerstrom. More specifically, because Applicant is claiming the "component" of the flow, it is the examiner's position that the shifting flow of Segerstrom when it enters the spray ring/loop circuit (26) from the vertical conduit pictured in Fig. 1 will indeed have a component of the flow that is tangential to the loop conduit flow direction.

Regarding claims 2 and 17, Segerstrom further discloses the loop conduit forms a peripheral ambit around an encompassed area (see Fig. 5 which illustrates a loop formed around a central area) and whereby the outlet openings are directed such that the outlet flow direction of the wetting fluid has a component directed inwardly towards the encompassed area (see Fig. 1 which illustrates the spray from the outlet openings is directed toward the central area).

Regarding claims 4, 16 and 19, Segerstrom further discloses the conduit (spray ring 26) forming the loop conduit has an internal cross sectional contour in a plane perpendicular to the loop-line flow direction that is free from a convex section (See Fig 2 which illustrates a circular cross section, which is free from a convex section).

Regarding claim 5, Segerstrom further discloses the loop conduit extends in a two-dimensional plane (see Fig. 5) and the inlet point is provided in the outer peripheral wall of the loop conduit (see Figs. 1 and 5 where the inlet conduit (not labeled) is the same diameter of the loop conduit, which means that while the inlet conduit does not approach the loop circuit in the same plane (it is perpendicular), the inlet point does extend across the entire diameter of the loop circuit, including the outer peripheral wall).

Regarding claim 10, Segerstrom further discloses the reactor vessel is provided with an inlet port (see flange on right side of vessel in Fig. 1 which is fluidly connected to the spray ring 26) for connecting to a wetting fluid supply, whereby the inlet port is located gravitationally higher than the spray ring (see Fig. 1 where the inlet port is located above the spray ring 26), and wherein the inlet opening of the spray ring is connected to the inlet port via an internal supply conduit (see Fig. 1 where the vertical portion of the conduit is the internal supply conduit).

Regarding claim 11, Segerstrom further discloses the internal supply conduit extends exclusively non-horizontally (internal supply conduit is the vertical portion of the conduit pictured in Fig. 1 for feeding the spray ring with fluid).

Regarding claim 12, Segerstrom further discloses the internal supply conduit (vertical portion of the conduit connecting the inlet port to the spray ring) is connected to the inlet port via a distribution box (horizontal portion of the conduit in Fig. 1 is the distribution box), which distribution box is provided with an access port in a wall part (hole in vessel wall, see Fig. 1) opposite the 'internal' supply conduit (see Fig. 1) and essentially in line with the 'internal' supply conduit (see Fig. 1 where the inlet port,

distribution box (horizontal portion of pipe) and internal supply conduit are in line with each other).

Regarding claim 18, Segerstrom further discloses the plurality of outlet openings are directed directly to the water surface (see Fig. 1 which illustrates the outlet openings direct water at the water surface 28).

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Segerstrom (EP 0318071 A1) in view of Ellis (US 4,000,753).

Regarding claim 3, Segerstrom teaches removable nozzles (12) that comprise a threaded piece (see Fig. 3) to attach the nozzle to the spray ring (col. 4 lines 10-18). Segerstrom, however, does not explicitly disclose that the outlet openings comprise a flange to connect nozzles.

Ellis also discloses nozzles which are attached to a distribution means to inject water/fluid (see abstract).

Ellis teaches a nozzle (38) that comprises threads (54) for securing the nozzle to the distribution means (boss, 36). Ellis also teaches a flange (56) that is connected to the nozzle (see Fig. 3) and is bolted to the distribution means/boss (see Fig. 3). Ellis teaches such a configuration in order to provide a securing means so the nozzle does not inadvertently become loosened (col. 3 lines 10-16) as well as providing a means to prevent unauthorized removal of the nozzle (see abstract).

As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to add the nozzle flange of Ellis to the outlet nozzles of Segerstrom in order

to provide a securing means so the nozzle does not inadvertently become loosened as well as providing a means to prevent unauthorized removal of the nozzle.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Segerstrom (EP 0318071 A1).

Regarding claim 6, Segerstrom discloses a single inlet at a single inlet point wherein the inlet flow direction has a component that is tangential to the loop-line flow direction (as discussed above and illustrated in Fig. 1). Segerstrom does not explicitly disclose a plurality of inlets are provided in a plurality of inlet points. However, such a modification is nothing more than a duplication of system parts. A mere duplication of parts has no patentable significance unless a new and unexpected result is produced (see MPEP §2144.04 (VI) (B)). Furthermore, increasing the number of inlets to the loop conduit would have been obvious to one of ordinary skill in the art at the time of the invention in order to increase the amount of coolant water that can be flowed through the spray ring of Segerstrom and increase the amount of cooling of the descending slag).

(10) Response to Argument

On the bottom of page 3, into page 4, Appellant argues that the nozzles 125a through 125h of Anderson would correspond to the outlets of the spray ring in the instant invention, not the inlet as indicated by the examiner. The examiner respectfully disagrees with this argument. The conduits 125 of Anderson act as inlets of cooling fluid into the loop conduit 106. In the claims (claims 1 and 9), Appellant does not provide any structure to the inlet that does not read on the inlets 125 of Anderson. Furthermore, on the top of page 4, Appellant argues that there is

no teaching in the Anderson reference of having an inlet to a spray ring being formed at a tangential angle to prevent accumulation of sediment within a spray ring. The examiner respectfully disagrees with this argument. Appellant does not claim that the "inlet" is formed at a tangential angle, but only that "the inlet flow direction has a component" at a tangential angle to the loop flow direction. Such a feature is indeed taught by Anderson where the fluid is injected into the loop conduit (106) at a tangential angle to the flow of the fluid inside the conduit.

On page 4, second paragraph, Appellant argues that Segerstrom does not teach a tangential component to the inlet line. The examiner notes, however, that this was not claimed. As mentioned above, Appellant claims that the "flow" has a tangential component, not the "inlet line". As such, the examiner points to Fig. 5 of Segerstrom (reproduced below).

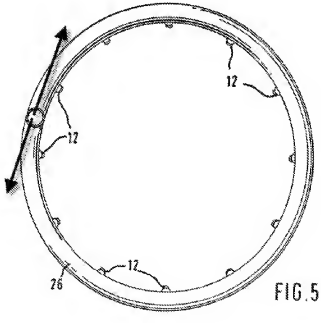

FIG.5

In operation, fluid enters though the inlet (on the left side of this figure). At the inlet point, flow is directed outwardly to flow along the path of loop conduit (26). The examiner has indicated arrows to show the direct of flow at this inlet point. These arrows do comprise a "component" that is tangential to the loop conduit. Again, Appellant does not claim that the "inlet line" structure is tangential to the loop conduit, but merely that the "flow" has a "component" that is tangential to the loop line flow direction.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Matthew J Merkling/

Examiner, Art Unit 1723

Conferees:

/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1723

/Anthony McFarlane/